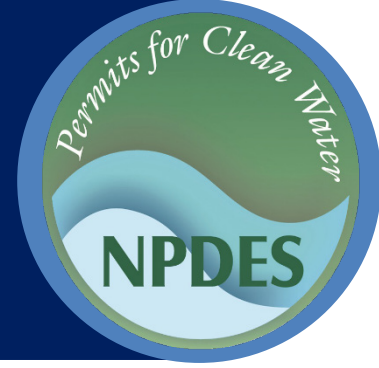




# Stormwater Best Management Practice

## Educating the Community about Green Infrastructure



Minimum Measure: Public Education and Outreach on Stormwater Impacts  
Subcategory: Education for Residents

### Description

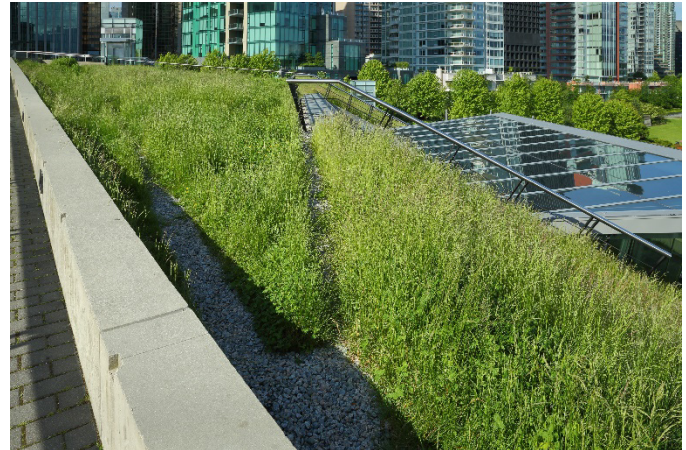
Communities have historically used elements of “gray infrastructure” (e.g., tunnels, curb and gutters, pipes) to capture and move stormwater quickly away from developed areas. However, **green infrastructure**, a stormwater management strategy that employs a variety of engineered and natural elements to absorb and filter stormwater where it falls, has proven to offer more substantial environmental, economic and social benefits.

Green infrastructure includes, **rain gardens and bioretention, green roofs, permeable pavements, grassed swales, and rainwater harvesting systems**, among other stormwater controls. These approaches allow municipalities to meet development goals and expand their communities while also providing effective stormwater management in their community.

### Green Infrastructure

“Green infrastructure” (as defined by the **Clean Water Act**) is the range of measures that use plant or soil systems, permeable pavement or other permeable surfaces or substrates, stormwater harvest or reuse, or landscaping to store, infiltrate or evapotranspire stormwater and reduce flows to sewer systems or to surface waters. Green infrastructure includes bioretention, tree boxes, bioswales, green streets, conservation areas and permeable pavements. These practices can be installed with gray infrastructure to help manage stormwater and provide multiple benefits such as open space, habitat creation, resiliency and better aesthetics. EPA’s **Green Infrastructure Modeling Toolkit** has a variety of resources that may help build long-term stormwater planning strategies.

Public outreach is an important component of a municipal green infrastructure program because it can increase community buy-in from developers, government officials and residents. Educating a wide range of



Green infrastructure practices—such as the green roof shown here—capture, manage and mitigate stormwater more effectively than traditional “gray infrastructure.”

community members about green infrastructure can help ensure that residents are aware of their benefits. Residents can contribute to effective management of green infrastructure by removing trash and debris from outflow points, using fertilizers properly, and maintaining vegetation. A green infrastructure outreach program also can help ensure developers know how the municipality’s code allows them to meet stormwater requirements using proper engineering designs. This fact sheet provides information on how municipalities can educate their community members about what green infrastructure is, the benefits it can provide, and how to maintain green infrastructure practices.

### Understand Community Knowledge Gaps and Current Practices

Before employing an outreach strategy, a municipality should understand the community’s baseline of knowledge on green infrastructure. That way, it can identify any barriers or knowledge gaps that may be preventing residents from understanding what green infrastructure is, the intent and impact of green infrastructure, as well as motivators that may be driving residents’ decisions and behavior. For example, municipalities might ask residents the following:

- Do you think the cost of creating and looking after green infrastructure is justified by its benefits?
- Do you think green infrastructure provides economic benefits to an area?
- Good quality green infrastructure can provide a variety of benefits. Which of these benefits do you think green infrastructure can provide in your area or are most important to you?

Municipalities can use community surveys, focus groups and public meetings to [solicit this information from the public](#).

Municipalities can also reach out to developers to get an idea of their current practices and willingness to integrate green infrastructure into their projects. This will help municipalities identify and address any hesitations developers may have in adopting green infrastructure practices in their work. For example, do developers perceive green infrastructure as a fad with limited long-term reliability? Do they worry that green infrastructure will involve additional costs or drawn-out project timelines? Municipalities can discuss these topics during initial project planning meetings to identify any concerns and emphasize the importance of green infrastructure at the onset of development projects.

## Identify Key Audiences and Decisionmakers

Municipalities can tailor their outreach strategies to reach key audiences and decisionmakers. Residents who live near green infrastructure practices, active green infrastructure development projects or areas that would benefit from green infrastructure are particularly important audiences. Municipalities can also analyze the results of their baseline community surveys to identify developers, neighborhoods or demographic groups that indicated a resistance to green infrastructure or misunderstanding of its importance and benefits and tailor certain outreach materials for these groups.

## Determine a Program Approach

Once the municipality understands its community's knowledge gaps, barriers, motivators and current practices, it can begin planning an education and

outreach approach. Municipalities can use a variety of the strategies discussed in this section to reach a wider audience and reinforce the information they would like to convey. When determining a program approach, municipalities can also refer to EPA's [Soak Up the Rain](#) and [Stormwater Smart](#) programs for tips, tools and examples on how to educate residents about green infrastructure projects.

## Post and Distribute Educational Materials (Online and Print)

Municipalities can develop flyers, fact sheets, bill inserts, videos and webpages with information about green infrastructure and its importance in stormwater management. Content can include examples of green infrastructure, instructions on proper care, information about the benefits, and photos or a map of green infrastructure within the community. Municipalities can tailor the content to include specific motivators or knowledge gaps that they have identified. For example, Anne Arundel County in Maryland has a section on its [Green Infrastructure Master Plan webpage](#) that outlines ways in which the plan will help the environment, bolster the local economy, and provide recreational benefits. D.C. Water's [Green Infrastructure Project brochure](#) states that its program will provide green entry-level jobs for city residents and increase property values.

For more examples of educational materials, see the following:

- The City of New Orleans, Louisiana, posted a [video](#) to its website that describes the purpose and importance of green infrastructure.
- This [fact sheet](#) from Durham, North Carolina, provides a summary of green infrastructure, coupled with eye-catching photos and graphics.
- Montgomery County, Maryland, developed an [Introduction to Green Streets video](#), explaining the purpose, progress and benefits of its green infrastructure program.
- The materials can also target developers within the community, such as Colorado Springs' [Green Infrastructure Guidance Manual](#).

## Educational Signs and Placards

Signs and placards in public areas next to green infrastructure can catch people's attention, inform them about green infrastructure, and convey its importance and the intent behind it. For example, the Rhode Island Department of Transportation and the Rhode Island Green Infrastructure Coalition have partnered to place [educational signs](#) at rain gardens, swales, vegetated buffers and other installed green infrastructure throughout the state.

Temporary signage can also inform residents about upcoming projects, as in the case of these [colorful street decals](#) that the Philadelphia Water Department placed throughout the city in areas where it had scheduled green infrastructure projects to take place within six months.

## Incentive Programs

Incentive programs, such as tax credits, rebates and subsidies, encourage property owners to install green infrastructure on their lots. Typically, these programs will offer money to residents or developers who have installed qualifying green infrastructure to offset the cost of installation. For example, Montgomery County, Maryland's [RainScapes Rewards Rebate Program](#) offers rebates for property owners—up to \$7,500 for residential properties and \$20,000 for commercial properties—who install approved green infrastructure, such as rain gardens, rain barrels or conservation landscaping. Other incentives might include zoning upgrades (see the Philadelphia Water Department's [development incentives](#) for examples), reduced permitting fees, tax rebates or stormwater fee discounts.

## Social Media

Social media is another useful tool that can help municipalities reach a wider audience. For example, the Louisville, Kentucky, Metropolitan Sewer District shared

[this post](#) showing a simple rainwater harvesting design and a link to its website's green infrastructure page. Posts that explain the benefits of ongoing infrastructure projects such as [this one](#) from the Metropolitan District in Hartford, Connecticut, can help increase community buy-in on local development projects. Monitoring engagement, such as likes, shares and comments, can also help municipalities gauge their communities' general outlook or interest in green infrastructure topics.

## Interactive Tours, Maps or Events

Enabling residents to identify and see green infrastructure in person is a great way to engage the community and increase awareness and interest in these systems. Online maps such as Charlottesville, Virginia's [CityGreen Map](#) or Austin, Texas' [Small Scale Green Infrastructure Map](#) pinpoint locations of green infrastructure in the community. These interactive maps provide photos and information about installed green infrastructure. The Lake Champlain Sea Grant goes a step further by outlining a bike tour route on its [Burlington Green Stormwater Infrastructure Tour Story Map](#). Some municipalities may choose to organize in-person walking tours to showcase their green infrastructure or host green-infrastructure-themed races, like the Nashville Metro Water Service's [Urban Runoff 5K](#).

## Evaluate Program Effectiveness

Municipalities can monitor the effectiveness of their programs through methods including surveys before and after outreach campaigns, monitoring social media engagement, tracking distribution of rebates and other incentive programs, and surveying green infrastructure around town to observe whether property owners are properly maintaining their systems. Based on these evaluations, the municipality may choose to adjust its approach or continue implementing strategies that have proven successful.

## Additional Resources

- The University of Maryland Municipal Online Stormwater Training (MOST) Center offers videos, lessons, graphics, and other educational content to educate users about stormwater topics.
- EPA's What is Green Infrastructure? webpage includes a brief explanation and examples of various types of green infrastructure practices.
- EPA's Tools, Strategies and Lessons Learned from EPA Green Infrastructure Technical Assistance Projects report provides tips and detailed examples of successful green infrastructure development projects.
- EPA's Green Infrastructure Opportunities That Arise During Municipal Operations report provides tips and detailed examples of successful green infrastructure development projects.

### Additional Information

Additional information on related practices and the Phase II MS4 program can be found at EPA's National Menu of Best Management Practices (BMPs) for Stormwater website

### Disclaimer

*This fact sheet is intended to be used for informational purposes only. These examples and references are not intended to be comprehensive and do not preclude the use of other technically sound practices. State or local requirements may apply.*